

CLAIMS:

We claim:

1. A method of folding pants, comprising:

creating a folding nip between first and second transport devices, the folding nip  
 5 comprising first and second vacuum rolls operatively associated with the respective first  
 and second transport devices;

interposing separation members between the first and second transport devices,  
 the separation members disposed on opposite sides of a machine center line, the  
 separation members disposed outward from the machine center line;

10 transporting a plurality of discrete articles to the folding nip, each discrete article  
 defining a leading half comprising opposed leading side panels, a trailing half comprising  
 opposed trailing side panels, and an interconnecting region disposed between and  
 interconnecting the leading and trailing halves;

positioning the leading half in proximity to the second vacuum roll and positioning  
 15 the trailing half in proximity to the first vacuum roll;

moving the interconnecting region into the folding nip;

drawing the leading side panels toward the second vacuum roll and drawing the  
 trailing side panels toward the first vacuum roll;

advancing the leading and trailing halves into the folding nip; and

20 positioning the leading side panels on one side of the separation members and  
 positioning the trailing side panels on an opposite side of the separation members.

2. The method of claim 1, wherein the discrete articles define a minimum transverse  
 width dimension and a maximum transverse width dimension, and the separation  
 25 members are spaced from one another in a cross machine direction a distance greater  
 than the minimum transverse width dimension and less than the maximum transverse  
 width dimension.

3. The method of claim 1, wherein the leading half and the trailing half comprise  
 30 mating mechanical fastening components.

4. The method of claim 1, wherein positioning the leading half in proximity to the  
 second vacuum roll comprises transporting the leading half past the folding nip.

5. The method of claim 1, wherein moving the interconnecting region into the folding nip comprises contacting the interconnecting region with folding blades.

6. A method of folding pants, comprising:

5 creating a folding nip between first and second transport devices, the folding nip comprising first and second vacuum rolls operatively associated with the respective first and second transport devices;

10 transporting a plurality of discrete articles to the folding nip, each discrete article defining a leading half comprising opposed leading side panels, a trailing half comprising opposed trailing side panels, and an interconnecting region disposed between and interconnecting the leading and trailing halves, the leading and trailing side panels outstretched in a cross machine direction, the leading side panels comprising first fastening components, the trailing half comprising second fastening components capable of refastenably engaging the first fastening components;

15 positioning the leading half and the outstretched leading side panels in proximity to the second vacuum roll and positioning the trailing half and the outstretched trailing side panels in proximity to the first vacuum roll;

moving the interconnecting region into the folding nip;

20 drawing the outstretched leading side panels toward the second vacuum roll and drawing the outstretched trailing side panels toward the first vacuum roll;

advancing the leading and trailing halves into the folding nip; and

maintaining the leading side panels separate from the trailing side panels while the interconnecting region is moved into the folding nip and until the discrete articles are downstream of the folding nip.

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7. The method of claim 6, wherein maintaining the leading side panels separate from the trailing side panels comprises positioning a separation member between the leading and trailing side panels.

30 8. The method of claim 7, wherein the discrete articles define a minimum transverse width dimension and a maximum transverse width dimension, and the separation members are spaced from one another in a cross machine direction a distance greater than the minimum transverse width dimension and less than the maximum transverse width dimension.

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9. The method of claim 6, wherein maintaining the leading side panels separate from the trailing side panels comprises drawing the leading side panels to the second transport device and drawing the trailing side panels to the first transport device.

5 10. The method of claim 6, wherein moving the interconnecting region into the folding nip comprises contacting the interconnecting region with folding blades.

11. The method of claim 6, wherein moving the interconnecting region into the folding nip comprises drawing the interconnecting region with vacuum.

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12. The method of claim 6, wherein positioning the leading half and the outstretched leading side panels in proximity to the second vacuum roll comprises transporting the leading half past the folding nip.

15 13. A method of folding pants, comprising:

creating a folding nip between first and second transport devices, the folding nip comprising first and second nose rolls operatively associated with the respective first and second transport devices;

interposing separation members between the first and second transport devices, the separation members disposed on opposite sides of a machine center line, the separation members disposed outward from the machine center line;

20 transporting a plurality of discrete articles on the first transport device, each discrete article defining a leading half comprising opposed leading side panels, a trailing half comprising opposed trailing side panels, and an interconnecting region disposed between and interconnecting the leading and trailing halves, the leading and trailing side panels outstretched in a cross machine direction, the leading side panels comprising first fastening components, the trailing half comprising second fastening components capable of refastenably engaging the first fastening components;

25 transporting the leading half past the folding nip;

30 moving the interconnecting region into the folding nip;

advancing the leading and trailing halves into the folding nip; and

positioning the outstretched leading side panels on one side of the separation members and positioning the outstretched trailing side panels on an opposite side of the separation members.

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14. The method of claim 13, wherein the discrete articles define a minimum transverse width dimension and a maximum transverse width dimension, and the separation members are spaced from one another in a cross machine direction a distance greater than the minimum transverse width dimension and less than the maximum transverse width dimension.

15. The method of claim 13, wherein transporting the leading half past the folding nip comprises carrying the leading half past the folding nip on a vacuum device.

16. The method of claim 15, wherein the vacuum device comprises a rotating puck.

17. The method of claim 15, wherein the vacuum device transfers the leading half to a transfer plate.

18. The method of claim 17, wherein the leading half reverses direction while disposed on the transfer plate.

19. The method of claim 13, wherein the first nose roll comprises a vacuum roll and vacuum operation of the first nose roll is discontinued while the leading half is transported past the first nose roll.

20. The method of claim 13, wherein the trailing half comprises hook fasteners.

21. The method of claim 13, wherein the side panels comprise an elastomeric material capable of stretching in a direction generally perpendicular to the machine direction.

22. The method of claim 13, wherein moving the interconnecting region into the folding nip comprises contacting the interconnecting region with folding blades.

23. The method of claim 13, wherein the garments are disposable absorbent articles.

24. The method of claim 23, wherein the disposable absorbent articles are training pants.

25. An apparatus for folding pants having a leading half comprising opposed leading side panels, a trailing half comprising opposed trailing side panels, and an interconnecting region disposed between and interconnecting the leading and trailing halves, the apparatus comprising:

- 5 first and second transport devices defining therebetween a folding nip, the folding nip comprising first and second vacuum rolls operatively associated with the respective first and second transport devices;

- separation members interposed between the first and second transport devices, the separation members disposed on opposite sides of a machine center line, the  
10 separation members disposed outward from the machine center line, the separation members each having an upstream end and an opposite downstream end, the upstream ends located in proximity to the first and second vacuum rolls, the downstream ends located downstream of the first and second vacuum rolls; and

- a control system adapted to repeatedly activate and deactivate vacuum operation  
15 of the first and second vacuum rolls.